

# **BLM Study Review of Hells Canyon Complex Studies**

## **Vegetation of the Snake River Corridor in Hells Canyon Weiser, Idaho, to the Salmon River**

### **Technical Report, Appendix E.3.3-1**

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#### **1. INTRODUCTION**

Field work for this study was conducted from 1994 through 1999 to characterize existing vegetation conditions along 163 miles of the Snake River and associated reservoirs, from Weiser, Idaho, at river mile (RM) 351.2, downriver to the confluence of the Snake and Salmon rivers (RM 188.2) and for 9.6 miles along the Powder River Arm of Brownlee Reservoir. The lateral extent of the study area generally encompassed all lands within 0.5 mile of each shoreline above Hells Canyon Dam (RM 247.5) and all lands within 0.25 miles of each shoreline below Hells Canyon Dam. Because relatively little was known about the riparian resources in the study area, compared with upland resource, this study had more sampling on riparian habitats.

#### **2. CONCLUSIONS**

The vegetation characteristics of Hells Canyon were assessed at two scales. For the first scale, researchers used aerial photography to classify vegetation, natural feature, and land use cover types in the study area. Results of this effort provide a description of the relative amounts of vegetation cover types in the study area. Twenty-six vegetation, natural feature, and land use cover types were classified in the study area.

The second scale involved field sampling to assess the various plant assemblages occurring each cover and type and their distribution. Upland vegetation cover types occupy almost 66% of the study area, compared with less than 3% for vegetated riparian cover types. Although upland habitat is more abundant, the diversity of plant assemblages occurring in upland cover types is less than in riparian cover types. While 50 plant assemblages were found in the 8 upland cover types sampled, 72 plant assemblages were found in the 4 riparian cover types.

Several riparian plant assemblages tend to be unique to the tributary drainages of the Snake River in the study area rather than occurring along shorelines in the canyon bottom. This study distinguished between those resource directly associated with the Snake River riparian zone (and associated reservoirs) and those resource more characteristic to tributary drainages.

Many plant assemblages in the canyon are dominated by introduced weeds and many species are designated as *noxious weeds* by Idaho and/or Oregon. Most weedy riparian assemblages occur along the headwaters of the Brownlee Reservoir and in the Weiser Reach. This is where most riparian vegetation occurs along the Snake River in the study area due to the presence of a relatively broad floodplain. Riparian zones are generally vulnerable to invasion by exotic species because rivers are dynamic and have recurrent disturbance (e.g., flooding, scour, sediment transfer and deposition), water is available all year-round, and rivers form a natural network for dispersal across the landscape.

### **3. STUDY ADEQUACY**

The study meets intended research parameters. This study could assist in addressing potential questions that may arise from project impacts and development of Protection, Maintenance, and Enhancement measures. Rationale exists to support extending the study area downriver from the mouth of the Salmon River.

### **4. BLM CONCLUSIONS AND RECOMMENDATIONS**

#### **CONCLUSIONS**

This study was not intended to describe every plant assemblage that currently exists in the study area. Rather, it represents a relatively large sample of the vegetation throughout the canyon, and it identifies the most likely plant assemblage one would expect to encounter within the study area. The two scale assessment (identified above) does an adequate job of characterizing canyon vegetation (i.e., cover types and plant assemblages).

#### **RECOMMENDATIONS**

The downriver boundary of the study was the mouth of the Salmon River. However, past and future implementation of the hydroelectric operations will have direct and indirect effects downriver from the mouth of the Salmon River. It is recommended that the specific study area and vegetation assessment should have been extended downriver from the mouth of the Salmon River to Captain John Creek.

Existing noxious weed infestations may be more significant downriver from the mouth of the Salmon River, rather than in the Hells Canyon to Salmon River reach. It is recommended that additional noxious weed infestation assessments be conducted in the Snake River corridor downriver from the Salmon River.